

Case 020105-02: 2 Year Old Cutting Horse Bilateral Sub-Chondral Bone Cysts Concurrent with Arthroscopic Surgery

On January 31, 2005, a 2 year-old Quarter Horse mare presented for pre-training screening films. Lameness examination found this horse to be sound at a walk, trot, and following upper limb flexion. Despite a normal physical exam, radiographs of both stifle joints identified abnormal flattening of the cartilage surface and the presence of bilateral sub-chondral bone cysts within both medial femoral condyles (Fig 1).



**Figure 1 : Radiograph Right Stifle
January 31, 2005**

Based on radiographic findings, surgery in conjunction with direct intra-cystic injection of adipose derived stem cells was elected by the owners and attending veterinarian. On January 31, 2005, 29.5 grams of subcutaneous adipose tissue were harvested from the left gluteal region lateral to the tail head and submitted for stem cell recovery.

On February 2, 2005 exploratory arthroscopic surgery identified surface cartilage lesions in both medial femoro-patellar joints with the right more severely affected than the left (Fig 2, 3). Necrotic tissue was debrided, both joints were lavaged, and then decompressed.



**Figure 2: Feb 2, 2005
Arthroscopic Image Right MFT Joint**



**Figure 3: Feb 2, 2005
Arthroscopic Image Left MFT Joint**

Immediately prior to scope removal 5.5 million adipose-derived regenerative cells were injected into each cystic remnant and the surgical ports were closed by standard technique. The

patient was discharged with instructions to restrict activity to stall rest only for the initial 30 days following surgery, and then to permit 5-10 minute hand walking sessions for 30 days.

Over the following 3 months, the patient was exercised daily and progressed from rehabilitation status into a reconditioning program; this cutting horse formally entered training in May 2005. Radiographic evaluation on May 3, 2005 revealed upwards of 80% resolution of the subchondral defect in the right stifle and 70% resolution in the left (Fig 4). Physical examination revealed the horse to be sound at the walk, trot, and following upper limb flexion.

By August 2005, the horse had been actively training for 3 months. To date, this horse has shown no lameness.



**Figure 4 : Radiograph Right Stifle
May 3, 2005**